

Amendments to the Claims

1 1. (currently amended) A method for processing a compressed input video,
2 comprising:
3 decoding the compressed input video to produce pixels of an interlaced
4 picture, the interlaced picture having a first spatial resolution, and a top-field
5 and a bottom-field;
6 producing, for each macroblock of pixels in the interlaced ~~interface~~
7 picture, a macroblock coding type, and in which the macroblock coding type
8 includes a macroblock motion type and a macroblock transform type; and
9 filtering adaptively ~~while downsampling~~ the top-field and the bottom-
10 field of the interlaced picture according to the macroblock coding type and the
11 macroblock transform type to produce a progressive picture with a second
12 spatial resolution less than the first spatial resolution, in which the filtering
13 jointly performs de-interlacing and the downsampling of the interlaced picture
14 ~~is performed jointly;~~ and
15 encoding the progressive picture.

2. (cancelled)

1 3. (previously presented) The method of claim 1, in which the macroblock
2 coding type includes intra-coding and inter-coding.

1 4. (previously presented) The method of claim 1, in which the macroblock
2 transform type includes a frame-based transform and a field-based transform.

1 5. (previously presented) The method of claim 1, in which the macroblock
2 coding type further includes a macroblock motion type and corresponding
3 motion vector when the macroblock coding type is inter-coding.

1 6. (original) The method of claim 5, in which the macroblock motion type
2 includes frame-based and field-based.

1 7. (original) The method of claim 1, in which the filtering includes frame-based
2 filtering and field-based filtering.

1 8. (original) The method of claim 7, in which the filtering is field-based
2 when the macroblock coding type is inter-coding and the macroblock motion
3 type is field-based.

- 1 9. (previously presented) The method of claim 7, in which the filtering is
2 field-based when the macroblock coding type is inter-coding, the
3 macroblock motion type is frame-based, and an absolute value of motion
4 vectors corresponding to the macroblock are less than a threshold.
- 1 10. (original) The method of claim 9, in which the threshold equals zero.
- 1 11. (original) The method of claim 9, in which the threshold is greater than
2 zero.
- 1 12. (original) The method of claim 7, in which the filtering is field-based
2 when the macroblock coding type is intra-coding and the macroblock
3 transform type is field-based.
- 1 13. (original) The method of claim 7, in which the filtering is frame-based
2 when the macroblock coding type is intra-coding and the macroblock
3 transform type is frame-based.
- 1 14. (previously presented) The method of claim 7, in which the filtering is
2 frame-based when the macroblock coding type is inter-coding and the
3 macroblock motion type is frame-based, and an absolute value of motion
4 vectors corresponding to the macroblock are greater than or equal to a
5 threshold.
- 1 15. (original) The method of claim 7, in which the filtering is frame-based
2 and operates on input samples from the top-field and bottom-field of the
3 interlaced picture.
- 1 16. (original) The method of claim 7, in which the filtering is field-based and
2 operates on input samples from the top-field or bottom-field.
- 1 17. (original) The method of claim 7, in which the filtering is field-based and
2 operates on input samples from the bottom-field.
- 1 18. (previously presented) The method of claim 1, in which the encoding
2 compresses the progressive picture.
3
- 4 19. (original) The method of claim 1, further comprising:
5 rendering the progressive picture on a display device.

20. (previously presented) A system for processing a compressed input video, comprising:

means for decoding the compressed input video to produce pixels of an interlaced picture, and producing, for pixels of each macroblock, a macroblock coding type, and in which the macroblock coding type includes a macroblock motion type and a macroblock transform type, the interlaced picture having a first spatial resolution, and a top-field and a bottom-field; and

means for filtering[[,]] adaptively [[,]] ~~while downsampling~~ the top-field and the bottom-field of the interlaced picture according to the macroblock coding type and the macroblock transform type to produce a progressive picture with a second spatial resolution less than the first spatial resolution, in which the filtering jointly performs de-interlacing and downsampling of the interlaced picture; and

an encoder configured to compress the progressive picture.